

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
28 October 2004 (28.10.2004)

PCT

(10) International Publication Number
WO 2004/092253 A1

- (51) International Patent Classification⁷: **C08G 83/00** (74) Agent: **DORRESTIJN, A.**; DSM Intellectual Property, P.O. Box 9, NL-6160 MA Geleen (NL).
- (21) International Application Number:
PCT/NL2004/000254 (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date: 14 April 2004 (14.04.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
03076116.7 16 April 2003 (16.04.2003) EP
60/466,723 1 May 2003 (01.05.2003) US
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- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR THE PRODUCTION OF AN ISOTROPIC POLYMERIC NETWORK

$$\frac{a(m_1 + \frac{n}{2}m_2)}{10^{26}(d+L)^3} \quad (I)$$

(57) Abstract: The present invention relates to a method for the production of an isotropic polymeric network comprising multifunctional molecules with a functionality of at least 5 by reacting in a solvent the multifunctional molecules with a coupling agent, wherein the coupling agent is present in an amount which is sufficient to couple the multifunctional molecules to at least 5 other multifunctional molecules and wherein the sum, ρ , of the amounts of the multifunctional molecules and coupling agent per unit of volume, in kg/m³, is at least equal to the value as given by expression (I) in which $a=0.2$ d = the diameter of the multifunctional molecule, including the length of the bonds to the middle of atoms of the coupling agent to which it is attached. L = the length of the coupling agent, measured between the middle of the atoms that are connected to the multifunctional molecule. m_1 = the molecular mass of the multifunctional molecule as present in the isotropic 20 polymeric network m_2 = the molecular mass of the coupling agent as present in the isotropic polymeric network n = the functionality of the multifunctional molecule ($n \geq 5$). The invention furthermore relates to an isotropic polymeric network with a density lower than 1000 kg/m³ and a specific Young's modulus of at least 0.01 GPa.m³/kg, shaped articles hereof and the use of the isotropic polymeric network as construction material.